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| L2 and (respond\$3 near3 order) | 6 |

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DB=USPT; PLUR=YES; OP=OR

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| <u>L3</u> | L2 and (respond\$3 near3 order) | 6 | <u>L3</u> |
| <u>L2</u> | L1 and (period near3 time) | 40 | <u>L2</u> |
| <u>L1</u> | (auction\$3) and (enter\$3 near3 order) | 68 | <u>L1</u> |

END OF SEARCH HISTORY

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 6 of 6 returned.**☐ 1. Document ID: US 6098051 A

L3: Entry 1 of 6

File: USPT

Aug 1, 2000

US-PAT-NO: 6098051

DOCUMENT-IDENTIFIER: US 6098051 A

TITLE: Crossing network utilizing satisfaction density profile

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|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | RWC | Draw Desc | Image |
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☐ 2. Document ID: US 6012046 A

L3: Entry 2 of 6

File: USPT

Jan 4, 2000

US-PAT-NO: 6012046

DOCUMENT-IDENTIFIER: US 6012046 A

TITLE: Crossing network utilizing satisfaction density profile with price discovery features

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|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | RWC | Draw Desc | Image |
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☐ 3. Document ID: US 5950177 A

L3: Entry 3 of 6

File: USPT

Sep 7, 1999

US-PAT-NO: 5950177

DOCUMENT-IDENTIFIER: US 5950177 A

TITLE: Crossing network utilizing optimal mutual satisfaction density profile

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|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | RWC | Draw Desc | Image |
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☐ 4. Document ID: US 5845266 A

L3: Entry 4 of 6

File: USPT

Dec 1, 1998

US-PAT-NO: 5845266

DOCUMENT-IDENTIFIER: US 5845266 A

TITLE: Crossing network utilizing satisfaction density profile with price discovery features

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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | RWC | Draw Desc | Image |
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☐ 5. Document ID: US 5689652 A

L3: Entry 5 of 6

File: USPT

Nov 18, 1997

US-PAT-NO: 5689652

DOCUMENT-IDENTIFIER: US 5689652 A

TITLE: Crossing network utilizing optimal mutual satisfaction density profile

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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
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| FIG | Draw Desc | Image |
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☐ 6. Document ID: US 5101353 A

L3: Entry 6 of 6

File: USPT

Mar 31, 1992

US-PAT-NO: 5101353

DOCUMENT-IDENTIFIER: US 5101353 A

TITLE: Automated system for providing liquidity to securities markets

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|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
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| FIG | Draw Desc | Image |
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| Terms | Documents |
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L3: Entry 4 of 6

File: USPT

Dec 1, 1998

DOCUMENT-IDENTIFIER: US 5845266 A

TITLE: Crossing network utilizing satisfaction density profile with price discovery features

Abstract Text (1):

A crossing network that matches buy and sell orders based upon a satisfaction and quantity profile includes a number of trader terminals that can be used for entering orders. The orders are entered in the form of a satisfaction density profile that represents a degree of satisfaction to trade a particular instrument at various (price, quantity) combinations. Typically, each order is either a buy order or a sell order. The trader terminals are coupled to a matching controller computer. The matching controller computer can receive as input the satisfaction density profiles entered at each one of the trading terminals. The matching controller computer matches orders (as represented by each trader's satisfaction density profile) so that each trader is assured that the overall outcome of the process (in terms of average price and size of fill) has maximized the mutual satisfaction of all traders. Typically, the matching process is anonymous. The matching process can be continuous or a batch process, or a hybrid of the two. Unmatched satisfaction density profiles can be used to provide spread and pricing information. Factors other than price and quantity also may be used to determine the degree of satisfaction. Optionally, priority may be given to certain profiles in the matching process to accommodate stock exchange rules, for example, requiring that priority be given to orders exhibiting the best price, regardless of size or any other consideration.

Brief Summary Text (7):

Various companies and exchanges operate computerized crossing networks, also called anonymous matching systems. By way of example, crossing networks used in connection with the trading of trading instruments are disclosed in U.S. Pat. No. 4,412,287, which discloses an automated stock exchange in which a computer matches buy and sell orders for a variety of stocks; U.S. Pat. No. 3,573,747, which discloses an anonymous trading system for selling fungible properties between subscribers to the system; U.S. Pat. No. 3,581,072, which discloses the use of a special purpose digital computer for matching orders and establishing market prices in an auction market for fungible goods; U.S. Pat. No. 4,674,044, which discloses an automated securities trading system; U.S. Pat. No. 5,136,501, which discloses an anonymous matching system for effectuating trades through automatic matching in which buyers and sellers who are willing to trade with one another based on specified criteria, such as price, quantity and credit, may automatically trade when matching events occur satisfying these criteria; and U.S. Pat. No. 5,101,353, which discloses an automated system for providing liquidity to ' securities markets in which orders are entered by the system and executed in real time either internally between system users or externally with stock exchanges and markets.

Brief Summary Text (11):

Instinet, owned by Reuters, also operates an electronic trading system that facilitates the negotiation of trades between institutional investors and brokers. Instinet allows parties to trade anonymously, entering bids and offers electronically. Instinet subscribers can respond to an "order" entered into the system either by matching a displayed price or by making a counter bid or offer that is transmitted electronically to the counter parties. The trades that result from these negotiations become public information only when they are executed. This procedure provides an alternative to the direct human-to-human negotiation of orders in the upstairs market or on the trading floors. Instinet provides a limit order book for over-the-counter (OTC) securities and listed securities and also provides inside quotes for exchange listed securities for the seven U.S. exchanges on which stocks can be traded and for NASDAQ listed securities.

• Brief Summary Text (17):

Single price auction strategies, where a single, size-weighted average price is computed from overlapping bid and offer prices, and everyone is filled at that price. Again, traders would have to be confident of a significant number of non-disclosed orders in the system to have the incentive to enter orders at a better price than the best disclosed price.

Brief Summary Text (21):

Typically, existing crossing networks allow discrete buy or sell orders to be entered, e.g., "sell 10,000 IBM at 64." However, as stated above many traders, particularly institutional traders, wish to deal in baskets of securities, so that, for example, a portfolio is as far as possible, "balanced." Existing crossing networks do not easily allow traders to enter combinations of orders, such as "sell 10,000 IBM at 64 only if I can buy 20,000 DEC at 32". Furthermore, existing crossing networks do not allow traders to enter combinations of orders, such as "sell 10,000 IBM at 64 or sell 100,000 IBM at 63." Traders often have trading strategies such as, for example, "buy 3,000 IBM at 63, but if I can buy 5,000, I would be prepared to pay 63 and 1/2", that cannot be handled by existing crossing networks.

Detailed Description Text (11):

The trader can also set a Time-in-Force indicator 28 that determines for how long the order will be valid. Examples of valid Time-in-Force settings include "good until canceled" (GTC), "good until end of day" (End of Day) and for a set period of time (e.g., minutes).

Detailed Description Text (38):

At step 110, the CMC 2 ranks each grid element (possible buy/sell pair at a corresponding price and size) of each mutual satisfaction cross product profile in order from largest to smallest. The grid elements are then allocated in the ranked order (step 112), accumulating the price and size for the buyer and seller of each matched transaction (steps 114 and 116). When the maximum size limit for a particular satisfaction density profile is reached, all remaining lower ranked grid elements involving that profile are removed from consideration (steps 122 and 124). If all feasible (i.e., non-zero mutual satisfaction) crosses have not been done (step 118), then control returns to step 112. If all feasible crosses have been completed, then the process is temporarily suspended until the next order is entered or an existing unmatched order is canceled or modified (step 120), upon which control returns to step 108.

Detailed Description Text (39):

To operate the present invention as a continuous crossing network, then control should return to step 108 whenever a new order is entered or an existing order canceled or modified.

CLAIMS:

1. A crossing network that matches orders for instruments where the orders are represented by a satisfaction density profile, the crossing network comprising:

a plurality of terminals for entering orders in the form of a satisfaction density profile that represents a degree of satisfaction to trade an instrument at a plurality of (price, quantity) combinations, each satisfaction density profile representing either a buy order or a sell order for the instrument; and

a matching controller computer coupled to each one of the plurality of terminals over a communications network and receiving as input each satisfaction density profile entered at each one of the plurality of terminals, the matching controller computer matching, where possible, satisfaction density profiles representing buy orders with satisfaction density profiles representing sell orders, and thereafter comparing unmatched satisfaction density profiles representing buy orders for one or more predetermined instruments with unmatched satisfaction density profiles representing sell orders for corresponding one or more predetermined instruments to obtain spread information for each one or more predetermined instruments.

10. A crossing network that matches orders for instruments where the orders are represented by a satisfaction density profile, the crossing network comprising:

a plurality of terminals for entering orders in the form of a satisfaction density profile that represents a degree of satisfaction to trade an instrument at a plurality

- of (price, quantity) combinations, each satisfaction density profile representing either a buy order or a sell order for the instrument; and

a matching controller computer coupled to each one of the plurality of terminals over a communications network and receiving as input each satisfaction density profile entered at each one of the plurality of terminals, the matching controller computer matching, where possible, satisfaction density profiles representing buy orders with satisfaction density profiles representing sell orders,

the matching controller computer aggregating information from each entered satisfaction density profile to obtain an aggregate density profile.